

<b>Prüfbericht-Nr.:</b> Test Report No.:		<b>CN21BSRV 001</b>		<b>Auftrags-Nr.:</b> Order No.:		168281275		<b>Seite 1 von 55</b> Page 1 of 55	
<b>Kunden-Referenz-Nr.:</b> Client Reference No.:		N/A		<b>Auftragsdatum:</b> Order date:		03-03-2021			
<b>Auftraggeber:</b> Client:		<b>AOK Industrial company Limited</b> 1# Building, Sans Souci Technology Industrial Park, Shajin street, Shenzhen city, Guangdong Provice, China							
<b>Prüfgegenstand:</b> Test item:		LED Street Light							
<b>Bezeichnung / Typ-Nr.:</b> Identification / Type No.:		AOK-80WiL02-NV-L3-00-3070-BN-P-T221, AOK-80WiL02-NV-L3-00-4070-BN-P-T221, AOK-80WiL02-NV-L3-00-5770-BN-P-T221, AOK-80WiL02-NV-L5-00-3070-BN-P-T221, AOK-80WiL02-NV-L5-00-4070-BN-P-T221, AOK-80WiL02-NV-L5-00-5770-BN-P-T221							
<b>Auftrags-Inhalt:</b> Order content:		Type examination							
<b>Prüfgrundlage:</b> Test specification:		IES LM-79-08 plus the client's special requirements							
<b>Wareneingangsdatum:</b> Date of receipt:		03-03-2021		<p>Detaillierte Fotodokumentation siehe Anlage zu diesem Bericht</p> <p>Detailed photo documentation see appendix to this report</p>					
<b>Prüfmuster-Nr.:</b> Test sample No.:		A003022961							
<b>Prüfzeitraum:</b> Testing period:		05-04-2021 to 09-04-2021							
<b>Ort der Prüfung:</b> Place of testing:		See page 3							
<b>Prüflaboratorium:</b> Testing laboratory:		TÜV Rheinland (Shanghai) Co., Ltd.							
<b>Prüfergebnis*:</b> Test result*:		See following pages							
<b>geprüft von:</b> tested by:		Fernando Dai		<b>genehmigt von:</b> authorized by:		Boen Yang			
<b>Datum:</b> 2021-05-20 Date:		Fernando Dai		<b>Datum:</b> 2021-05-20 Date:		Boen Yang			
<b>Stellung / Position:</b>		PE		<b>Stellung / Position:</b>		Reviewer			
<b>Datum</b> Date	<b>Name / Stellung</b> Name / Position	<b>Unterschrift</b> Signature	<b>Datum</b> Date	<b>Name / Stellung</b> Name / Position	<b>Unterschrift</b> Signature				
<b>Sonstiges / Others:</b>		Tests at client's request and there is only test data available in this report and no further ratings for test result. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.							
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> Condition of the test item at delivery:				<b>Prüfmuster vollständig und unbeschädigt</b> Test item complete and undamaged					
<p>* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet</p> <p>Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested</p>									
<p><b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b> This test report only relates to the a. M. Test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</p>									

<b>Copy of marking plate:</b> N/A	
<b>Test item</b>	
Description.....	: LED Street Light
Trademark .....	: <b>AOK</b>
Model and/or type reference .....	: AOK-80WiL02-NV-L3-00-3070-BN-P-T221, AOK-80WiL02-NV-L3-00-4070-BN-P-T221, AOK-80WiL02-NV-L3-00-5770-BN-P-T221, AOK-80WiL02-NV-L5-00-3070-BN-P-T221, AOK-80WiL02-NV-L5-00-4070-BN-P-T221, AOK-80WiL02-NV-L5-00-5770-BN-P-T221
Manufacturer.....	: Same as applicant
Factory.....	: Same as applicant
Rating(s).....	: AC 220-240V, 50/60Hz, 80W, 3000K, 4000K or 5700K

<b>Test case verdicts</b>	
Test case does not apply to the test object.....	N/A
Test item does meet the requirement .....	P(ass)
Test item does not meet the requirement .....	F(ail)
<b>Testing</b>	
Date of receipt of test item .....	See cover page
Date(s) of performance of test.....	See cover page
<b>General remarks:</b>	
This report shall not be reproduced except in full without the written approval of the testing laboratory.	
The test results presented in this report relate only to the item(s) tested.	
“(see remark #)” refers to a remark appended to the report.	
“(see Annex #)” refers to an annex appended to the report.	
Throughout this report a point is used as the decimal separator.	
List of test equipment must be kept on file and available for review.	

**Summary of testing:**

1. As per client's special requirement, integrating sphere test and goniophotometer test was conducted under AC 220V, 50Hz.
2. Test place:  
**Shenzhen LCS Compliance Testing Laboratory Ltd.**  
B Area, 1-2F, Building B, Zhongyu Green High-tech Industrial Park, Wenge Road, Heshuikou, Gongming Street, Guangming New District, Shenzhen, China
3. LED luminaire model and LED specification see below tables.

Luminaire model list:

Type	LED Driver	Rated Input	Rated wattage(W)	Ra	LED	CCT
AOK-80WiL02-NV-L3-00-3070-BN-P-T221	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	AC 220-240V, 50/60Hz, 0.4A	80W	70	LUXEO N 3030 2D LINE Line	3000K
AOK-80WiL02-NV-L3-00-4070-BN-P-T221	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	AC 220-240V, 50/60Hz, 0.4A	80W	70	LUXEO N 3030 2D LINE Line	4000K
AOK-80WiL02-NV-L3-00-5770-BN-P-T221	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	AC 220-240V, 50/60Hz, 0.4A	80W	70	LUXEO N 3030 2D LINE Line	5700K
AOK-80WiL02-NV-L5-00-3070-BN-P-T221	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	AC 220-240V, 50/60Hz, 0.4A	80W	70	LUXEO N 5050	3000K
AOK-80WiL02-NV-L5-00-4070-BN-P-T221	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	AC 220-240V, 50/60Hz, 0.4A	80W	70	LUXEO N 5050	4000K
AOK-80WiL02-NV-L5-00-5770-BN-P-T221	Xi FP 110W 0.3-1.0A SNLDAE 230V C133 sXt	AC 220-240V, 50/60Hz, 0.4A	80W	70	LUXEO N 5050	5700K

LED specification:

Type	Manufacturer	Size (mm)	I <sub>F</sub> (mA)	V <sub>F</sub> (V)	CCT (K)	Viewing angle (°)
LUXEON 3030 2D LINE Line	Lumileds	3.00x3.00x0.66	120	5.8-6.6	3000K, 4000K, 5700K	116
LUXEON 5050	Lumileds	5.00x5.18x0.70	240	23.5-26.5		116

4. Test result only for models:  
AOK-80WiL02-NV-L3-00-3070-BN-P-T221, AOK-80WiL02-NV-L3-00-4070-BN-P-T221,  
AOK-80WiL02-NV-L3-00-5770-BN-P-T221, AOK-80WiL02-NV-L5-00-3070-BN-P-T221,  
AOK-80WiL02-NV-L5-00-4070-BN-P-T221, AOK-80WiL02-NV-L5-00-5770-BN-P-T221

## 5. Test summary: (All models are only different in the LED)

Model	AOK-80WIL02-NV-L3-00-3070-BN-P-T221	AOK-80WIL02-NV-L3-00-4070-BN-P-T221	AOK-80WIL02-NV-L3-00-5770-BN-P-T221	AOK-80WIL02-NV-L5-00-3070-BN-P-T221	AOK-80WIL02-NV-L5-00-4070-BN-P-T221	AOK-80WIL02-NV-L5-00-5770-BN-P-T221
LED type	LUXEON 3030 2D LINE	LUXEON 3030 2D LINE	LUXEON 3030 2D LINE	LUXEON 5050	LUXEON 5050	LUXEON 5050
LED model No.	L130-3070003000 X21 P7DH	L130-4070003000 X21 Q5DG	L130-5770003000 X21 Q2DG	L150-3070502400 000 L3A1	L150-4070502400 000 M3A1	L150-5770502400 000 M3A1
LED driver	(Philips) Xi FP 110W 0.3-1.0A SNLDAE 230V C133sXt					
Input Power (W)	78.02	77.99	77.98	77.74	77.01	76.91
Luminous Flux (lm)	11072.8	11794	11773	11368.8	11993.9	11685.7
Luminous Efficacy (lm/W)	141.91	151.22	150.98	146.24	155.74	151.95
CCT (K)	3004	3950	5512	2981	3892	5592
Ra	72.9	72.1	72.8	73.0	72.0	73.3
R9	-15	-29	-26	-26	-24	-22
SDCM	3.0	1.9	8.0 (based on 5000K centre point at: x=0.3460,y=0.3590)	2.1	3.2	9.1 (based on 5000K centre point at: x=0.3460,y=0.3590)

2.0	Ambient Conditions		P
2.1	General		P
2.2	Air Temperature	25°C±1°C	P
2.3	Thermal Condition for Mounting SSL Products		P
2.4	Air Movement		P
3.0	Power Supply Characteristics		P
3.1	Waveshape of AC power supply	<3%	P
3.2	Voltage regulation	Within ±0.2% under load	P
4.0	Seasoning of SSL Product		N/A
	No seasoning of SSL product	Tested with no seasoning	N/A
5.0	Stabilization of SSL Product		P
	SSL product has sufficiently stabilized before measurement	150 minutes	P
6.0	Operation Orientation		P
	SSL product shall be stabilized and measured in intended operating orientation	As normal use	P
7.0	Electrical Settings		P
	SSL product shall be operated at rated voltage	220VAC, 50Hz	P
	SSL product with dimming capability are tested at maximum input power condition		N/A
	SSL product with different modes are measured in all relevant modes		N/A
8.0	Electrical Instrumentations		P
8.1	Circuits		P
8.2	Uncertainties		P
9.0	Test methods for Total Luminous Flux measurement		P
9.1	Integrating sphere with a spectroradiometer (Sphere-spectroradiometer system)		P
9.2	Integrating sphere with a photometer head (Sphere-photometer system)		N/A
9.3	Goniophotometer		P
10.0	Luminous Intensity Distribution		P
11.0	Luminous Efficacy		P
	Calculation	See table 1	P
12.0	Test Methods for Color Characteristics of SSL Products		N/A
	Measurements	See table 1	N/A

Table 1	Test Data	
Model	AOK-80WIL02-NV-L3-00-3070-BN-P-T221	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
<b>Photometric Results</b>		
Total Luminous Flux (lm)	--	11072.8
Luminous Efficacy (lm/W)	--	141.91
Correlated Color Temperature (CCT, K)	3004	--
Color Rendering Index (Ra)	72.9	--
R9	-15	--
Chromaticity (Chroma x / Chroma y)	0.4382/0.4072	--
Chromaticity (Chroma u' / Chroma v')	0.2500/0.5228	--
SDCM	3.0	--
Imax (cd)	--	6930
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	73.4%
Zonal Flux (60-90°)	--	26.6%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	5° / 5°
Goniophotometer Type	--	Type C
<b>Electrical Results</b>		
Input Voltage (V)	--	220.1
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3573
Input Power (W)	--	78.02
Power Factor	--	0.9922
<b>Additional Information</b>		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 60.7	25.5/ 56.4
<b>Note:</b> - The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

Table 1	Test Data	
Model	AOK-80WIL02-NV-L3-00-4070-BN-P-T221	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	11794
Luminous Efficacy (lm/W)	--	151.22
Correlated Color Temperature (CCT, K)	3950	--
Color Rendering Index (Ra)	72.1	--
R9	-29	--
Chromaticity (Chroma x / Chroma y)	0.3836/0.3814	--
Chromaticity (Chroma u' / Chroma v')	0.2253/0.5041	--
SDCM	1.9	--
Imax (cd)	--	6802
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	74.8%
Zonal Flux (60-90°)	--	25.2%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	5° / 5°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	220.0
Input Frequency (Hz)	--	50.01
Input Current (A)	--	0.3572
Input Power (W)	--	77.99
Power Factor	--	0.9922
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	24.5/ 56.4
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

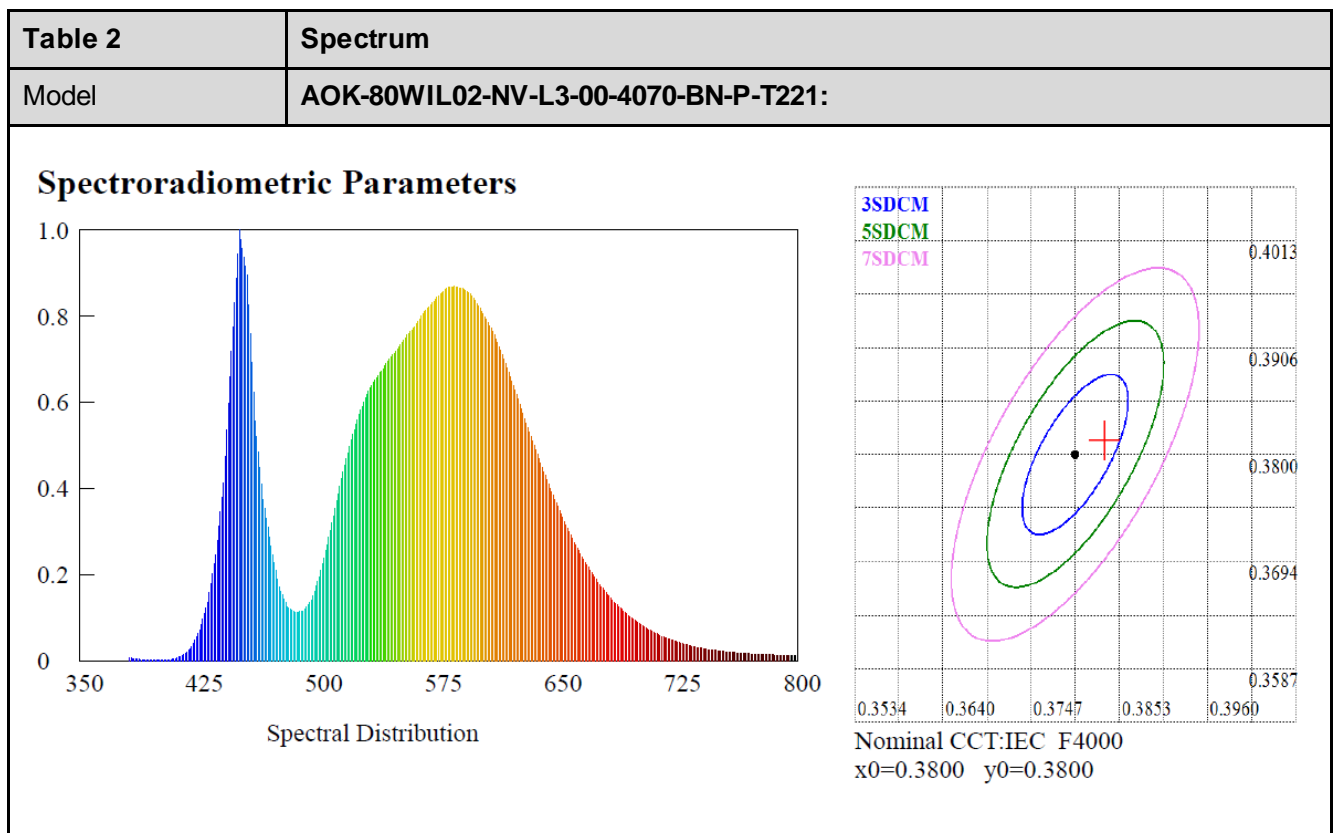
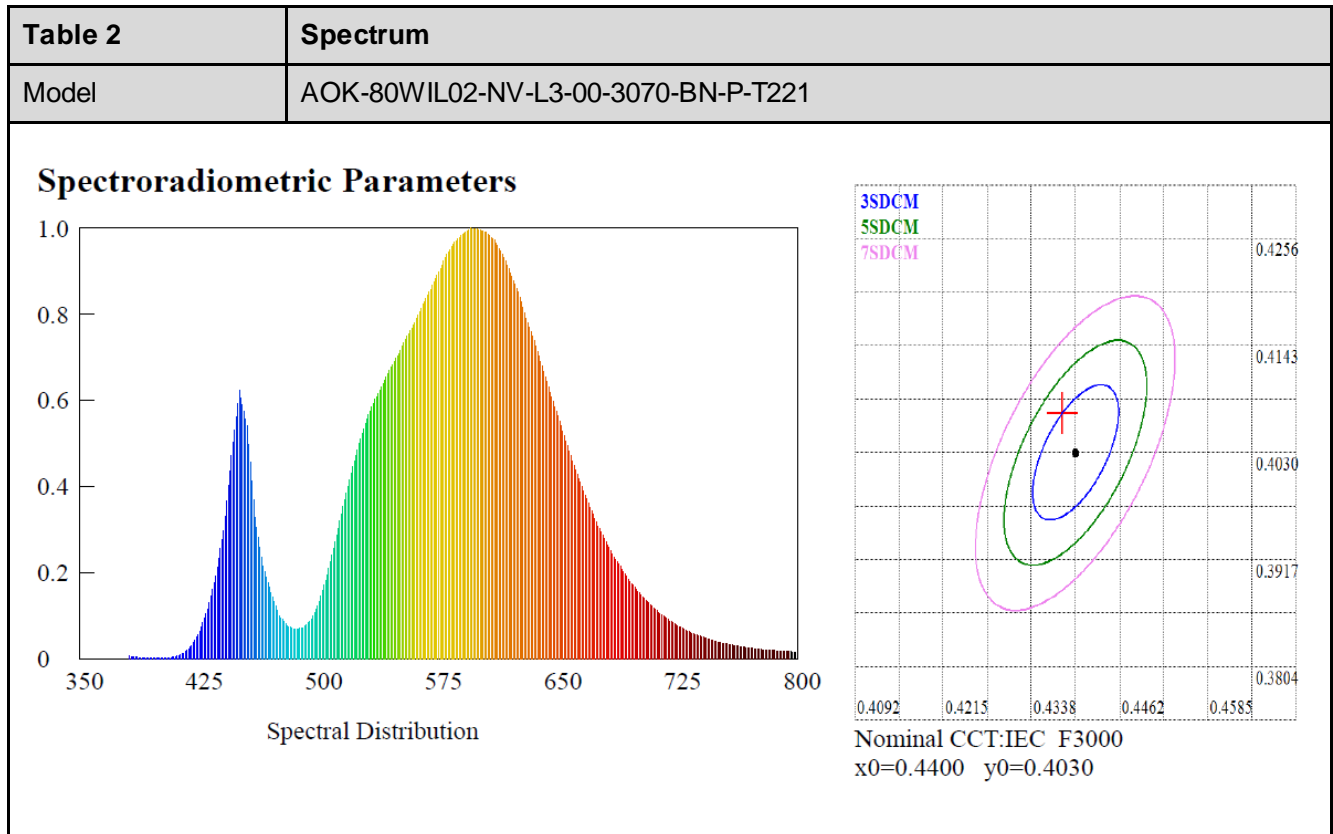
Table 1	Test Data	
Model	AOK-80WIL02-NV-L3-00-5770-BN-P-T221	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	11773
Luminous Efficacy (lm/W)	--	150.98
Correlated Color Temperature (CCT, K)	5512	--
Color Rendering Index (Ra)	72.9	--
R9	-26	--
Chromaticity (Chroma x / Chroma y)	0.3322/0.3473	--
Chromaticity (Chroma u' / Chroma v')	0.2043/0.4806	--
SDCM	8.0	--
Imax (cd)	--	6585
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	74.5%
Zonal Flux (60-90°)	--	25.5%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	5° / 5°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	220.0
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3572
Input Power (W)	--	77.98
Power Factor	--	0.9922
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	24.5/ 56.4
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

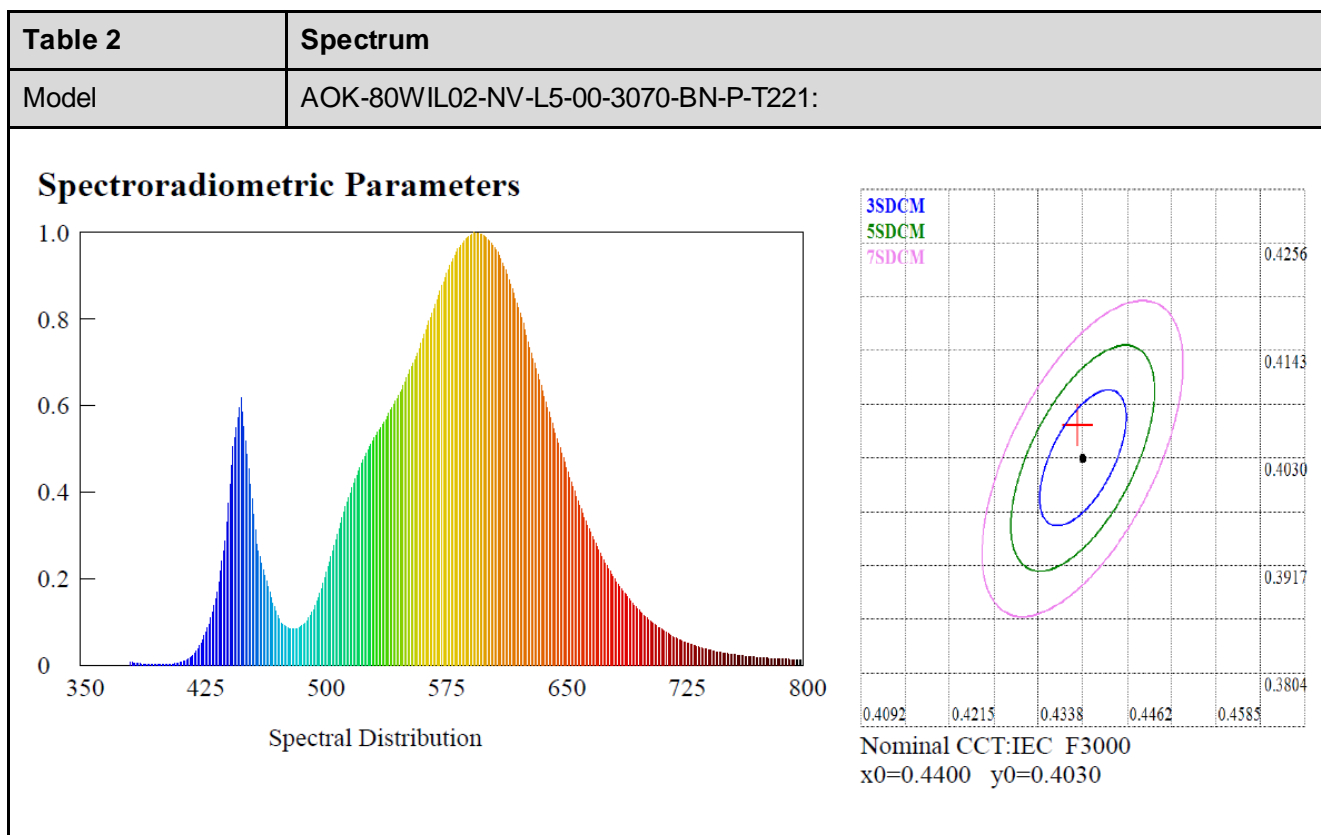
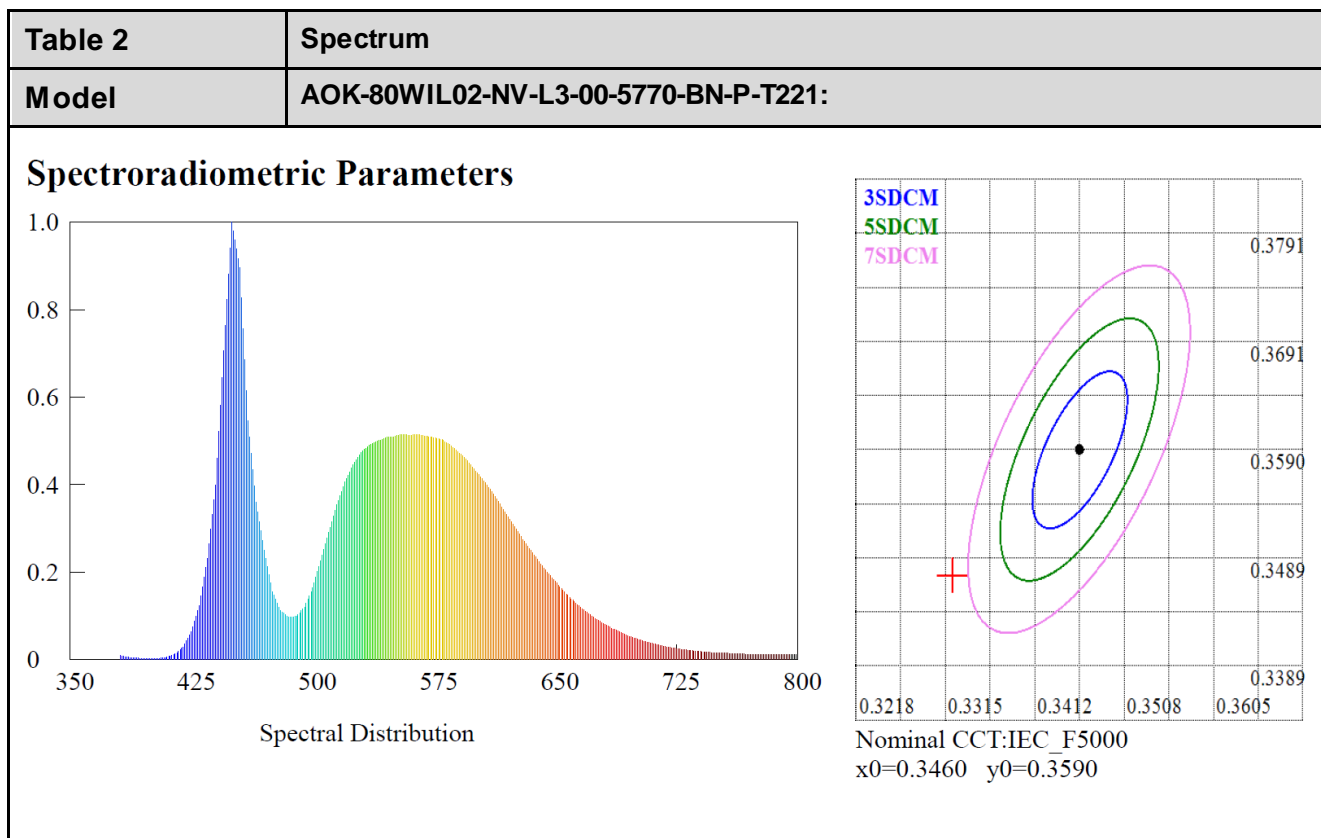


Table 1	Test Data	
Model	AOK-80WIL02-NV-L5-00-3070-BN-P-T221	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	11368.8
Luminous Efficacy (lm/W)	--	146.24
Correlated Color Temperature (CCT, K)	2981	--
Color Rendering Index (Ra)	73.0	--
R9	-26	--
Chromaticity (Chroma x / Chroma y)	0.4393/0.4065	--
Chromaticity (Chroma u' / Chroma v')	0.2511/0.5227	--
SDCM	2.1	--
Imax (cd)	--	4742
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	74.6%
Zonal Flux (60-90°)	--	25.4%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	5° / 5°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	220
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3559
Input Power (W)	--	77.74
Power Factor	--	0.9923
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	25.2/ 55.6
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

Table 1	Test Data	
Model	AOK-80WIL02-NV-L5-00-4070-BN-P-T221	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	11993.9
Luminous Efficacy (lm/W)	--	155.74
Correlated Color Temperature (CCT, K)	3892	--
Color Rendering Index (Ra)	72.0	--
R9	-24	--
Chromaticity (Chroma x / Chroma y)	0.3866/0.3841	--
Chromaticity (Chroma u' / Chroma v')	0.2262/0.5057	--
SDCM	3.2	--
I <sub>max</sub> (cd)	--	5026
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	74.0%
Zonal Flux (60-90°)	--	26.0%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	5° / 5°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	220.1
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3527
Input Power (W)	--	77.01
Power Factor	--	0.9923
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	24.2/ 56.6
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		

Table 1	Test Data	
Model	AOK-80WIL02-NV-L5-00-5770-BN-P-T221	
Test item	Measured Value	
	Integrating Sphere	Goniophotometer
Photometric Results		
Total Luminous Flux (lm)	--	11685.7
Luminous Efficacy (lm/W)	--	151.95
Correlated Color Temperature (CCT, K)	5592	--
Color Rendering Index (Ra)	73.3	--
R9	-22	--
Chromaticity (Chroma x / Chroma y)	0.3304/0.3450	--
Chromaticity (Chroma u' / Chroma v')	0.2040/0.4792	--
SDCM	9.1	--
I <sub>max</sub> (cd)	--	4885
Average Beam Angle (50%)	--	--
Zonal Flux (0-60°)	--	74.2%
Zonal Flux (60-90°)	--	25.8%
Zonal Flux (90-180°)	--	0%
Spacing Criteria (C/γ)	--	5° / 5°
Goniophotometer Type	--	Type C
Electrical Results		
Input Voltage (V)	--	220.1
Input Frequency (Hz)	--	50
Input Current (A)	--	0.3522
Input Power (W)	--	76.91
Power Factor	--	0.9923
Additional Information		
Stabilization Time (Light output and electrical power, Minutes)	More than 150min	More than 150min
Sphere Geometry Configuration	4π	--
Ambient Temperature (°C) / R.H. (%):	24.6 / 64.7	25.2/ 55.6
Note:		
- The sample is placed inside the integrating sphere or goniophotometer and power by a regulated supply. Stability is achieved when the variation of 3 readings of light output and electrical power over a period of 30 minutes, taken 15 minutes apart, is less than 0.5%.		





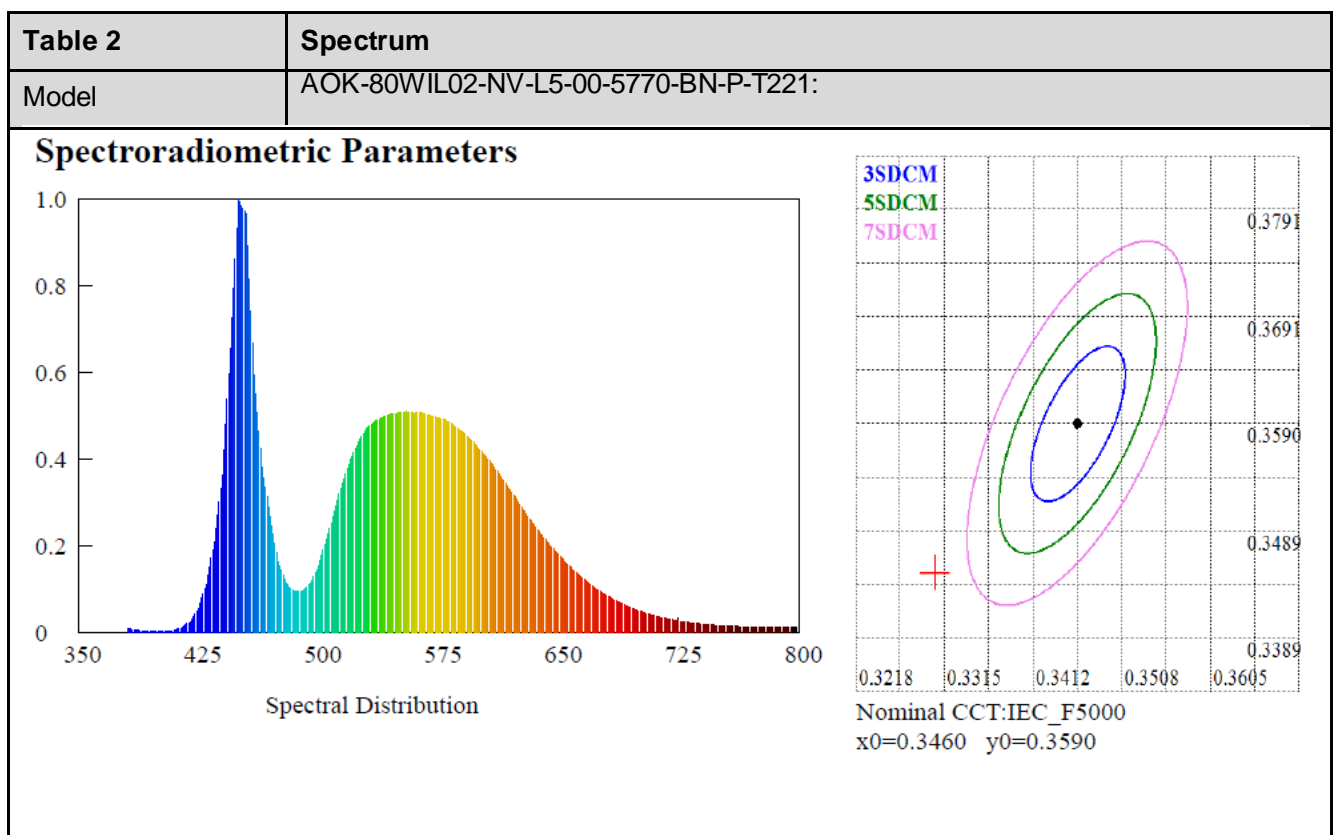
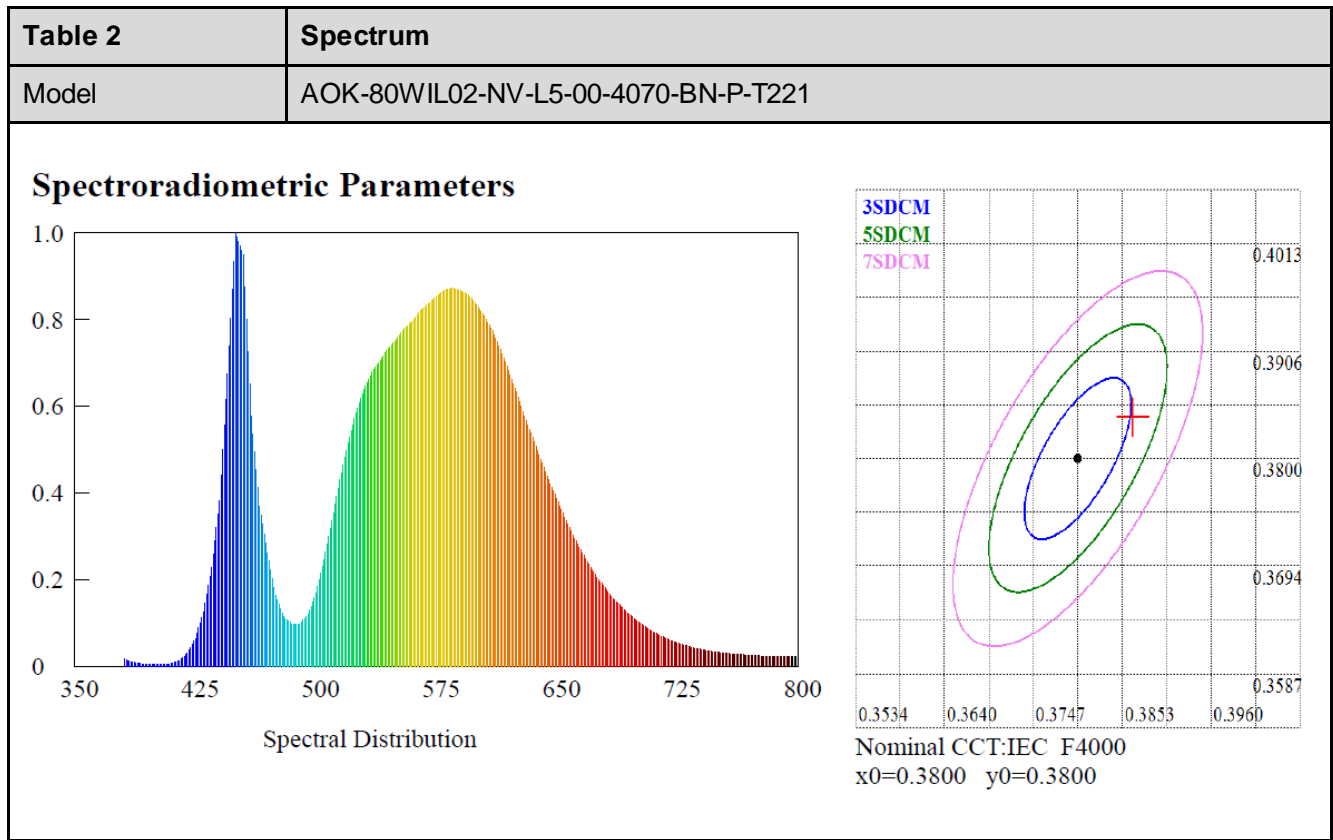
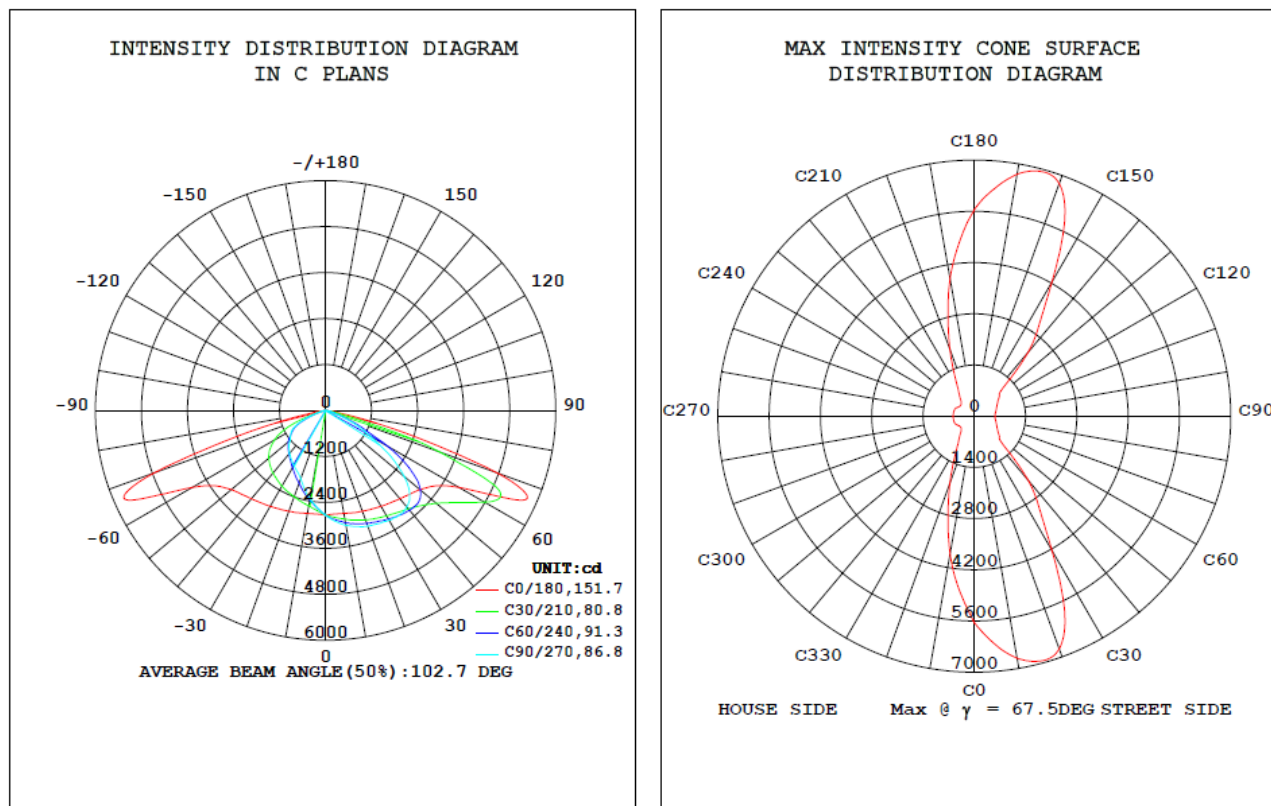


Table 3	Luminous Distribution Diagram
model	AOK-80WIL02-NV-L3-00-3070-BN-P-T221

AOK-80WIL02-NV-L3-00-3070-BN-P-T221\_LUXEON 3030 2D LINE\_3000K



Zonal Flux Diagram
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$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	2729	2928	3043	2928	2729	2445	2339	2445	0- 10	258.5	258.5	2.33,2.33
20	2799	3084	3214	3084	2799	2192	1901	2192	10- 20	758.5	1017	9.18,9.18
30	2890	3234	3310	3234	2890	1948	1658	1948	20- 30	1224	2241	20.2,20.2
40	3012	3436	3290	3436	3012	1676	1467	1676	30- 40	1654	3895	35.2,35.2
50	3215	3722	2670	3722	3215	1402	1206	1402	40- 50	2017	5912	53.4,53.4
60	4025	3210	1326	3210	4025	1034	999.7	1034	50- 60	2216	8127	73.4,73.4
70	4735	633.6	368.6	633.6	4735	329.8	390.1	329.8	60- 70	2206	10334	93.3,93.3
80	333.0	94.05	87.72	94.05	333.0	61.05	17.61	61.05	70- 80	698.5	11032	99.6,99.6
90	0	0	0	0	0	0	0	0	80- 90	40.54	11073	100,100
100	0	0	0	0	0	0	0	0	90-100	0	11073	100,100
110	0	0	0	0	0	0	0	0	100-110	0	11073	100,100
120	0	0	0	0	0	0	0	0	110-120	0	11073	100,100
130	0	0	0	0	0	0	0	0	120-130	0	11073	100,100
140	0	0	0	0	0	0	0	0	130-140	0	11073	100,100
150	0	0	0	0	0	0	0	0	140-150	0	11073	100,100
160	0	0	0	0	0	0	0	0	150-160	0	11073	100,100
170	0	0	0	0	0	0	0	0	160-170	0	11073	100,100
180	0	0	0	0	0	0	0	0	170-180	0	11073	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

**IESNA Luminaire Flux Distribution Table:**

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1289.6	11.6
FM - Front-Medium(30-60)	3778.7	34.1
FH - Front-High(60-80)	1948	17.6
FVH - Front-Very High(80-90)	28.338	0.3
Total Forward Light	7044.7	63.6

BL - Back-Low(0-30)	951.19	8.6
BM - Back-Medium(30-60)	2107.9	19.0
BH - Back-High(60-80)	956.76	8.6
BVH - Back-Very High(80-90)	12.206	0.1
Total Back Light	4028.1	36.4

UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

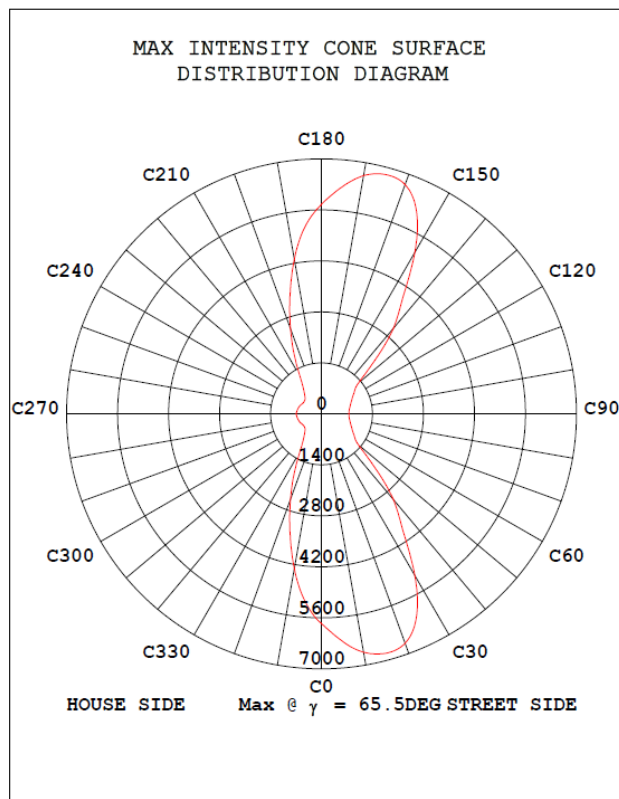
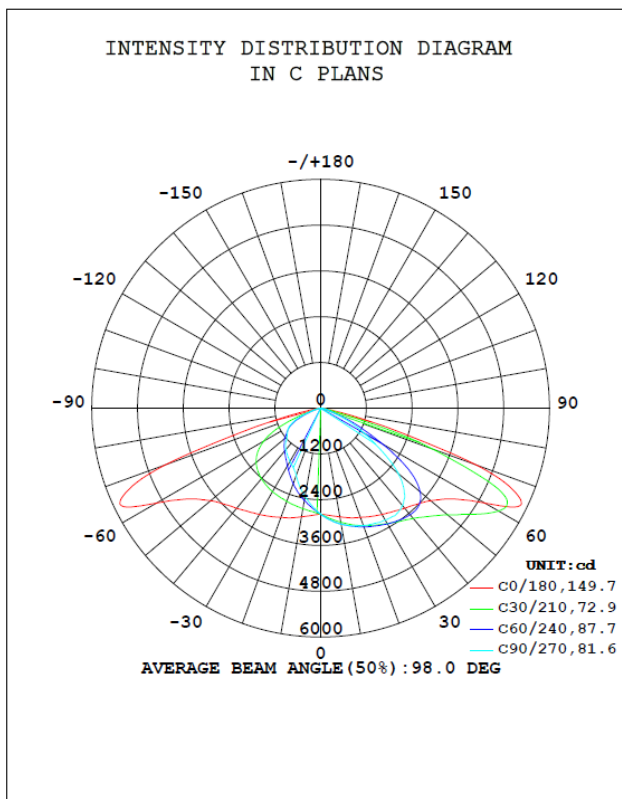
BUG(Back,Up,Glare) Rating	B2-U0-G2
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	4028.1	0	4028.1
Street Side	7044.7	0	7044.7



Table 3	Luminous Distribution Diagram
model	AOK-80WIL02-NV-L3-00-4070-BN-P-T221

AOK-80WIL02-NV-L3-00-4070-BN-P-T221\_LUXEON 3030 2D LINE\_4000K



Zonal Flux Diagram
--------------------

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum, lamp
10	2892	3060	3084	3060	2892	2557	2352	2557	0- 10	267.3	267.3	2.27, 2.27
20	3046	3299	3273	3299	3046	2335	1880	2335	10- 20	799.0	1066	9.04, 9.04
30	3217	3512	3386	3512	3217	2087	1618	2087	20- 30	1308	2374	20.1, 20.1
40	3426	3807	3337	3807	3426	1780	1419	1780	30- 40	1788	4162	35.3, 35.3
50	3772	4120	2657	4120	3772	1448	1153	1448	40- 50	2202	6364	54, 54
60	4981	3469	1331	3469	4981	1022	947.9	1022	50- 60	2458	8822	74.8, 74.8
70	4308	667.6	365.3	667.6	4308	305.6	383.3	305.6	60- 70	2308	11130	94.4, 94.4
80	248.9	103.1	89.19	103.1	248.9	60.52	16.70	60.52	70- 80	622.5	11753	99.7, 99.7
90	0	0	0	0	0	0	0	0	80- 90	40.64	11794	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	11794	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	11794	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	11794	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	11794	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	11794	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	11794	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	11794	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	11794	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	11794	100, 100
DEG	LUMINOUS INTENSITY: cd									UNIT: lm		

IESNA Luminaire Flux Distribution Table:

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1370.5	11.6
FM - Front-Medium(30-60)	4162.2	35.3
FH - Front-High(60-80)	1955.7	16.6
FVH - Front-Very High(80-90)	28.083	0.2
Total Forward Light	7516.5	63.7

BL - Back-Low(0-30)	1003.4	8.5
BM - Back-Medium(30-60)	2286.4	19.4
BH - Back-High(60-80)	974.73	8.3
BVH - Back-Very High(80-90)	12.555	0.1
Total Back Light	4277	36.3

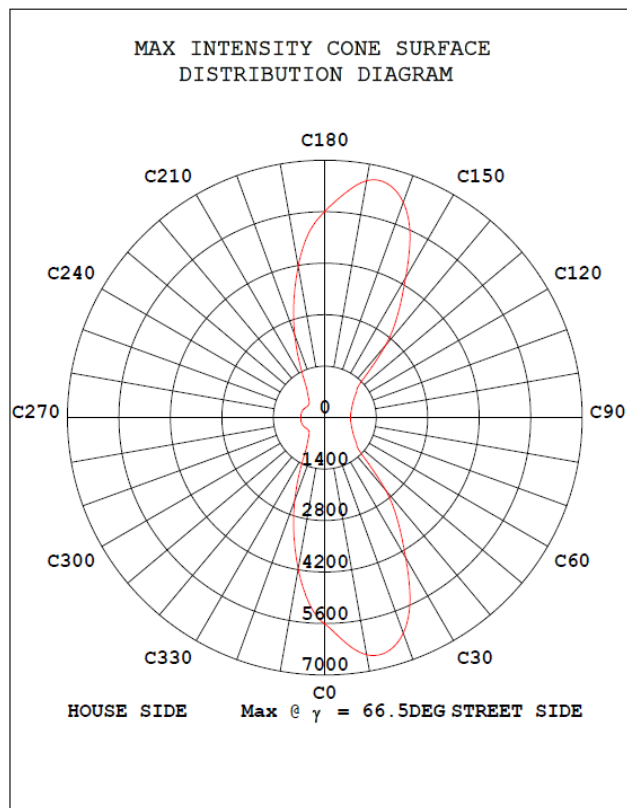
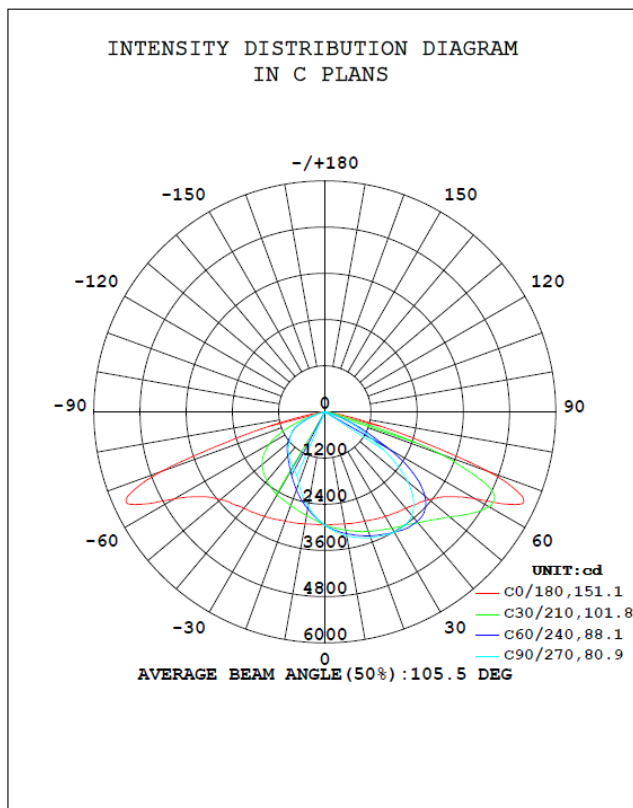
UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G2
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	4277	0	4277
Street Side	7516.5	0	7516.5

Table 3	Luminous Distribution Diagram
model	AOK-80WIL02-NV-L3-00-5770-BN-P-T221

AOK-80WIL02-NV-L3-00-5770-BN-P-T221\_LUXEON 3030 2D LINE\_5700K



Zonal Flux Diagram
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$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	2956	3166	3266	3166	2956	2631	2498	2631	0- 10	278.6	278.6	2.37, 2.37
20	3024	3374	3474	3374	3024	2363	1976	2363	10- 20	818.4	1097	9.32, 9.32
30	3133	3575	3607	3575	3133	2097	1663	2097	20- 30	1323	2420	20.6, 20.6
40	3266	3850	3515	3850	3266	1770	1457	1770	30- 40	1793	4213	35.8, 35.8
50	3540	4023	2802	4023	3540	1437	1189	1437	40- 50	2179	6392	54.3, 54.3
60	4526	3311	1423	3311	4526	1031	972.8	1031	50- 60	2377	8769	74.5, 74.5
70	4523	702.3	397.9	702.3	4523	346.0	401.1	346.0	60- 70	2249	11018	93.6, 93.6
80	394.2	120.2	98.19	120.2	394.2	67.94	19.39	67.94	70- 80	703.1	11721	99.6, 99.6
90	0	0	0	0	0	0	0	0	80- 90	52.36	11773	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	11773	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	11773	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	11773	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	11773	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	11773	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	11773	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	11773	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	11773	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	11773	100, 100
DEG	LUMINOUS INTENSITY: cd									UNIT: lm		

**IESNA Luminaire Flux Distribution Table:**

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1402.7	11.9
FM - Front-Medium(30-60)	4113.5	34.9
FH - Front-High(60-80)	1940.1	16.5
FVH - Front-Very High(80-90)	35.794	0.3
Total Forward Light	7492	63.6

BL - Back-Low(0-30)	1017.1	8.6
BM - Back-Medium(30-60)	2235.7	19.0
BH - Back-High(60-80)	1011.8	8.6
BVH - Back-Very High(80-90)	16.564	0.1
Total Back Light	4281.2	36.4

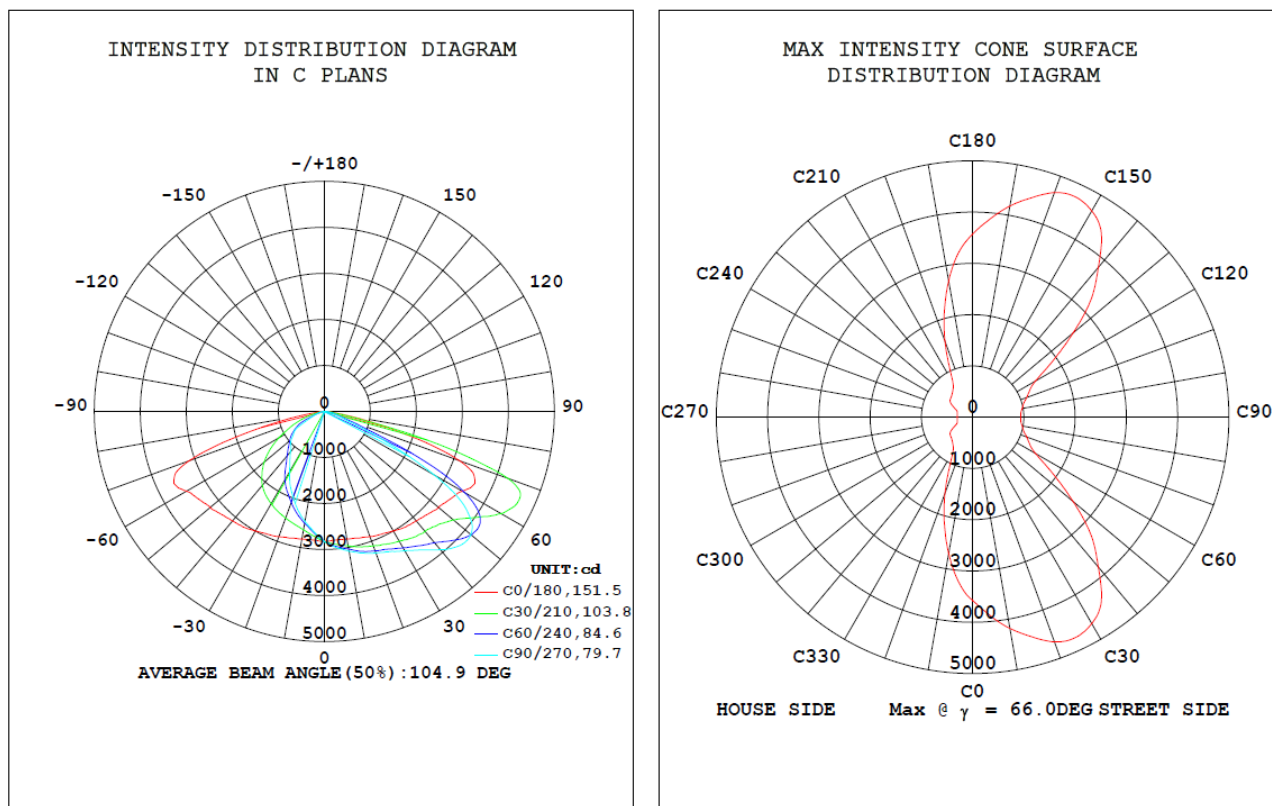
UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B3-U0-G3
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	4281.2	0	4281.2
Street Side	7492	0	7492

Table 3	Luminous Distribution Diagram
model	AOK-80WIL02-NV-L5-00-3070-BN-P-T221

AOK-80WIL02-NV-L5-00-3070-BN-P-T221\_LUXEON 5050\_3000K



Zonal Flux Diagram
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$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\%lum, lamp$
10	2813	3011	3083	3011	2813	2522	2426	2522	0- 10	266.5	266.5	2.34, 2.34
20	2890	3175	3270	3175	2890	2264	1986	2264	10- 20	781.1	1048	9.21, 9.21
30	2997	3308	3495	3308	2997	1965	1514	1965	20- 30	1256	2304	20.3, 20.3
40	3105	3567	3920	3567	3105	1576	1146	1576	30- 40	1692	3996	35.1, 35.1
50	3243	4006	4155	4006	3243	1124	938.4	1124	40- 50	2101	6097	53.6, 53.6
60	3462	4247	2759	4247	3462	817.4	618.5	817.4	50- 60	2387	8483	74.6, 74.6
70	3118	1446	427.1	1446	3118	445.2	214.9	445.2	60- 70	2010	10493	92.3, 92.3
80	489.7	178.4	117.2	178.4	489.7	79.37	24.93	79.37	70- 80	812.0	11305	99.4, 99.4
90	0	0	0	0	0	0	0	0	80- 90	63.80	11369	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	11369	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	11369	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	11369	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	11369	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	11369	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	11369	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	11369	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	11369	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	11369	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

**IESNA Luminaire Flux Distribution Table:**

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1325.5	11.7
FM - Front-Medium(30-60)	4281.1	37.7
FH - Front-High(60-80)	2060.6	18.1
FVH - Front-Very High(80-90)	45.077	0.4
Total Forward Light	7712.4	67.8

BL - Back-Low(0-30)	978.14	8.6
BM - Back-Medium(30-60)	1898.6	16.7
BH - Back-High(60-80)	760.97	6.7
BVH - Back-Very High(80-90)	18.724	0.2
Total Back Light	3656.4	32.2

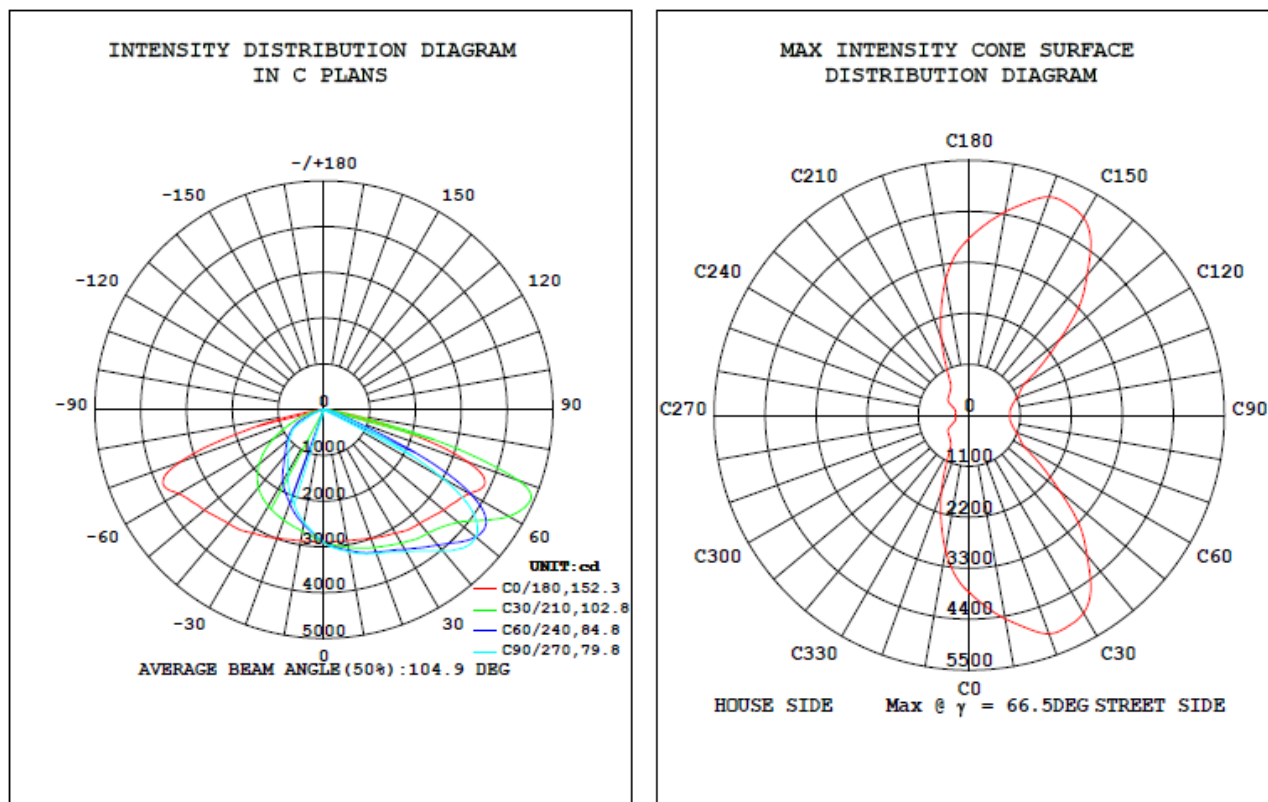
UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B2-U0-G2
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	3656.4	0	3656.4
Street Side	7712.4	0	7712.4

Table 3	Luminous Distribution Diagram
model	AOK-80WIL02-NV-L5-00-4070-BN-P-T221

AOK-80WIL02-NV-L5-00-4070-BN-P-T221 \_LUXEON 5050\_4000K



Zonal Flux Diagram
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$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi_{lum, lamp}$
10	2907	3108	3157	3108	2907	2616	2504	2616	0- 10	274.6	274.6	2.29, 2.29
20	2991	3275	3349	3275	2991	2359	2056	2359	10- 20	807.3	1082	9.02, 9.02
30	3117	3410	3583	3410	3117	2062	1580	2062	20- 30	1302	2384	19.9, 19.9
40	3250	3693	4033	3693	3250	1683	1204	1683	30- 40	1762	4147	34.6, 34.6
50	3412	4186	4330	4186	3412	1210	977.6	1210	40- 50	2201	6348	52.9, 52.9
60	3666	4461	2971	4461	3666	868.6	642.0	868.6	50- 60	2524	8872	74, 74
70	3334	1688	427.8	1688	3334	486.1	222.1	486.1	60- 70	2161	11033	92, 92
80	546.0	176.7	117.0	176.7	546.0	89.15	26.37	89.15	70- 80	892.6	11925	99.4, 99.4
90	0	0	0	0	0	0	0	0	80- 90	68.73	11994	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	11994	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	11994	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	11994	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	11994	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	11994	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	11994	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	11994	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	11994	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	11994	100, 100
DEG	LUMINOUS INTENSITY: cd									UNIT: lm		



**IESNA Luminaire Flux Distribution Table:**

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1367.4	11.4
FM - Front-Medium(30-60)	4469.1	37.3
FH - Front-High(60-80)	2217.8	18.5
FVH - Front-Very High(80-90)	48.014	0.4
Total Forward Light	8102.3	67.6

BL - Back-Low(0-30)	1016.8	8.5
BM - Back-Medium(30-60)	2018.3	16.8
BH - Back-High(60-80)	835.84	7.0
BVH - Back-Very High(80-90)	20.717	0.2
Total Back Light	3891.6	32.4

UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

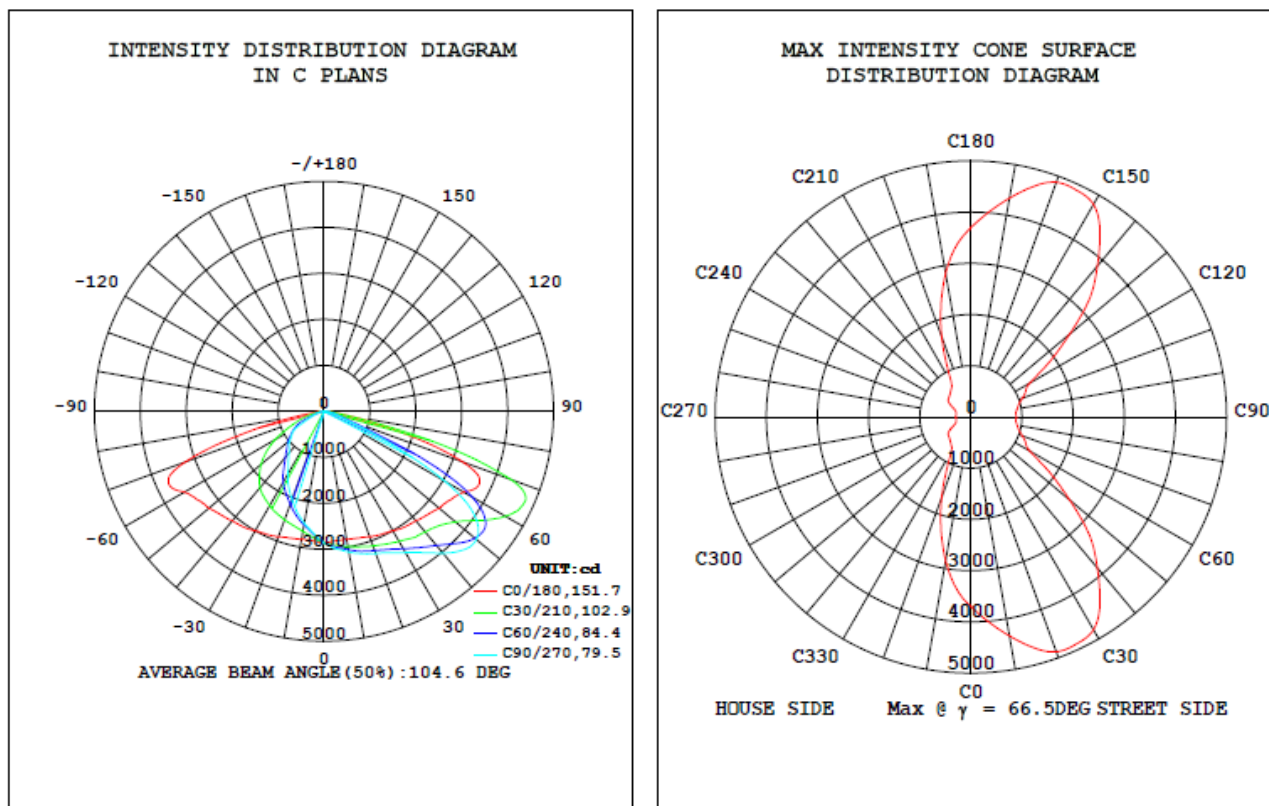
BUG(Back,Up,Glare) Rating	B3-U0-G2
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	3891.6	0	3891.6
Street Side	8102.3	0	8102.3



Table 3	Luminous Distribution Diagram
model	AOK-80WIL02-NV-L5-00-5770-BN-P-T221

AOK-80WIL02-NV-L5-00-5770-BN-P-T221\_LUXEON 5050\_5700K



Zonal Flux Diagram
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$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\eta_{lum, lamp}$
10	2823	3034	3105	3034	2823	2568	2473	2568	0- 10	269.6	269.6	2.31, 2.31
20	2899	3175	3293	3175	2899	2310	2041	2310	10- 20	789.1	1059	9.06, 9.06
30	3002	3319	3548	3319	3002	2024	1576	2024	20- 30	1271	2330	19.9, 19.9
40	3107	3613	4028	3613	3107	1658	1189	1658	30- 40	1721	4050	34.7, 34.7
50	3281	4133	4333	4133	3281	1174	959.8	1174	40- 50	2152	6202	53.1, 53.1
60	3518	4380	3032	4380	3518	831.6	644.9	831.6	50- 60	2472	8674	74.2, 74.2
70	3205	1586	434.2	1586	3205	463.1	220.4	463.1	60- 70	2106	10780	92.2, 92.2
80	485.6	168.7	118.7	168.7	485.6	79.29	25.64	79.29	70- 80	843.9	11624	99.5, 99.5
90	0	0	0	0	0	0	0	0	80- 90	61.80	11686	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	11686	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	11686	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	11686	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	11686	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	11686	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	11686	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	11686	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	11686	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	11686	100, 100
DEG	LUMINOUS INTENSITY: cd									UNIT: lm		

**IESNA Luminaire Flux Distribution Table:**

Zone	Lumens	Luminaire %
FL - Front-Low(0-30)	1332.4	11.4
FM - Front-Medium(30-60)	4383.7	37.5
FH - Front-High(60-80)	2153.1	18.4
FVH - Front-Very High(80-90)	44.014	0.4
Total Forward Light	7913.2	67.7

BL - Back-Low(0-30)	997.22	8.5
BM - Back-Medium(30-60)	1960.7	16.8
BH - Back-High(60-80)	796.85	6.8
BVH - Back-Very High(80-90)	17.782	0.2
Total Back Light	3772.6	32.3

UL - Uplight-Low(90-100)	0	0.0
UH - Uplight-High(100-180)	0	0.0
Total Up Light	0	0.0

BUG(Back,Up,Glare) Rating	B2-U0-G2
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Zone	Downward Lumens	Upward Lumens	Total Lumens
House Side	3772.6	0	3772.6
Street Side	7913.2	0	7913.2

[illegible]

[illegible]



y	C (DEG)	C (DEG)																		
	(DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0		2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736
5		2683	2665	2652	2634	2622	2610	2597	2579	2570	2559	2559	2547	2538	2545	2547	2542	2542	2542	2547
10		2660	2628	2595	2562	2534	2500	2470	2445	2420	2403	2378	2361	2352	2342	2342	2340	2339	2340	2342
15		2665	2616	2564	2512	2465	2417	2361	2322	2282	2239	2207	2178	2154	2136	2133	2126	2129	2126	2133
20		2680	2614	2541	2469	2399	2330	2260	2192	2137	2077	2023	1989	1949	1923	1910	1900	1901	1900	1911
25		2694	2615	2527	2432	2339	2244	2153	2074	1999	1928	1872	1824	1791	1768	1761	1752	1756	1752	1761
30		2713	2617	2511	2399	2281	2165	2055	1948	1859	1781	1725	1691	1669	1657	1656	1646	1658	1646	1656
35		2750	2627	2494	2354	2205	2071	1936	1810	1716	1642	1598	1574	1563	1559	1558	1554	1559	1554	1558
40		2789	2651	2483	2311	2132	1964	1804	1676	1580	1523	1488	1475	1466	1467	1465	1460	1467	1460	1465
45		2835	2669	2468	2257	2045	1845	1671	1545	1460	1413	1384	1373	1366	1359	1355	1347	1350	1347	1355
50		2897	2684	2442	2185	1936	1708	1522	1402	1330	1293	1270	1259	1246	1226	1215	1210	1206	1210	1215
55		3004	2714	2404	2079	1777	1518	1347	1244	1188	1136	1112	1112	1108	1109	1112	1114	1113	1114	1112
60		3275	2817	2352	1911	1538	1286	1134	1034	988	966	958	965	972	985	997	999	1000	999	997
65		3839	2999	2250	1608	1185	943	821	740	698	686	699	711	723	740	750	752	757	752	750
70		3108	2167	1377	874	606	437	359	330	319	319	338	370	386	394	392	389	390	389	392
75		1091	601	345	228	177	163	158	153	147	143	139	136	138	138	135	133	126	133	135
80		135	109	92.8	82.7	76.0	71.5	66.5	61.0	56.0	50.8	45.8	41.4	37.3	31.9	25.1	20.3	17.6	20.3	25.1
85		34.6	29.2	25.5	22.3	19.4	16.8	14.8	12.8	11.2	9.59	6.64	5.17	3.74	2.74	1.89	1.25	0.24	1.25	1.89
90		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table--4

UNIT: cd

<div> <div>C (DEG)</div> <div>γ (DEG)</div> </div>	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736	2736				
5	2545	2538	2547	2559	2559	2570	2579	2597	2610	2622	2634	2652	2665	2683	2700				
10	2342	2352	2361	2378	2403	2420	2445	2470	2500	2534	2562	2595	2628	2660	2693				
15	2136	2154	2178	2207	2239	2282	2322	2361	2417	2465	2512	2564	2616	2665	2714				
20	1923	1949	1989	2023	2077	2137	2192	2260	2330	2399	2469	2541	2614	2680	2741				
25	1768	1791	1824	1872	1928	1999	2074	2153	2244	2339	2432	2527	2615	2694	2767				
30	1657	1669	1691	1725	1781	1859	1948	2055	2165	2281	2399	2511	2617	2713	2806				
35	1559	1563	1574	1598	1642	1716	1810	1936	2071	2205	2354	2494	2627	2750	2851				
40	1467	1466	1475	1488	1523	1580	1676	1804	1964	2132	2311	2483	2651	2789	2906				
45	1359	1366	1373	1384	1413	1460	1545	1671	1845	2045	2257	2468	2669	2835	2979				
50	1226	1246	1259	1270	1293	1330	1402	1522	1708	1936	2185	2442	2684	2897	3069				
55	1109	1108	1112	1112	1136	1188	1244	1347	1518	1777	2079	2404	2714	3004	3254				
60	985	972	965	958	966	988	1034	1134	1286	1538	1911	2352	2817	3275	3684				
65	740	723	711	699	686	698	740	821	943	1185	1608	2250	2999	3839	4759				
70	394	386	370	338	319	319	330	359	437	606	874	1377	2167	3108	4077				
75	138	138	136	139	143	147	153	158	163	177	228	345	601	1091	1578				
80	31.9	37.3	41.4	45.8	50.8	56.0	61.0	66.5	71.5	76.0	82.7	92.8	109	135	228				
85	2.74	3.74	5.17	6.64	9.59	11.2	12.8	14.8	16.8	19.4	22.3	25.5	29.2	34.6	39.7				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

[illegible]

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[illegible]

Table--4

UNIT: cd

<div> <div>C (DEG)</div> <div>γ (DEG)</div> </div>	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	2777	2777	2777	2777	2777	2777	2777	2777	2777	2777	2777	2777	2777	2777	2777				
5	2594	2599	2606	2622	2639	2654	2667	2683	2697	2715	2735	2758	2771	2790	2805				
10	2383	2406	2427	2456	2489	2528	2557	2593	2637	2675	2710	2756	2786	2822	2857				
15	2174	2206	2245	2288	2337	2396	2452	2505	2575	2636	2694	2759	2820	2873	2921				
20	1945	1989	2050	2105	2176	2259	2335	2424	2510	2601	2679	2776	2853	2926	2992				
25	1750	1793	1851	1923	2011	2119	2226	2330	2448	2561	2673	2793	2892	2981	3061				
30	1621	1645	1682	1747	1832	1959	2087	2228	2376	2527	2671	2814	2935	3043	3134				
35	1520	1531	1547	1596	1671	1793	1937	2112	2293	2473	2659	2830	2983	3112	3224				
40	1423	1432	1442	1472	1531	1632	1780	1971	2189	2418	2636	2851	3039	3191	3321				
45	1315	1325	1335	1357	1403	1489	1616	1816	2065	2330	2601	2852	3095	3283	3434				
50	1166	1179	1196	1234	1274	1339	1448	1629	1892	2212	2530	2854	3147	3400	3605				
55	1059	1063	1067	1078	1100	1154	1263	1413	1659	2022	2425	2849	3254	3607	3912				
60	926	921	912	914	934	964	1022	1136	1357	1725	2234	2826	3433	4025	4547				
65	686	673	651	630	628	643	689	785	934	1250	1845	2588	3417	4362	5219				
70	358	349	334	308	292	297	306	330	384	555	847	1403	2209	3035	3839				
75	130	129	128	132	137	144	150	157	164	181	222	330	547	938	1276				
80	29.0	34.5	38.7	43.5	48.6	54.5	60.5	67.6	73.8	81.0	89.9	103	119	143	190				
85	2.27	3.51	4.74	6.15	8.35	10.5	12.5	14.7	17.4	20.4	24.1	29.2	34.7	41.0	46.7				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

[illegible]

[illegible]



[illegible]

Table--4

UNIT: cd

C (DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	2941	2941	2941	2941	2941	2941	2941	2941	2941	2941	2941	2941	2941	2941	2941				
5	2734	2737	2748	2755	2766	2777	2783	2801	2814	2829	2846	2861	2885	2894	2916				
10	2502	2518	2535	2556	2579	2606	2631	2661	2702	2733	2771	2802	2851	2879	2910				
15	2270	2295	2328	2362	2401	2446	2495	2544	2603	2656	2716	2772	2837	2886	2933				
20	2014	2051	2103	2155	2220	2288	2363	2435	2513	2588	2674	2748	2836	2902	2964				
25	1800	1840	1895	1962	2047	2138	2237	2333	2433	2532	2639	2737	2843	2930	2997				
30	1667	1688	1724	1780	1865	1973	2097	2231	2363	2489	2614	2732	2847	2955	3044				
35	1560	1576	1594	1628	1693	1797	1934	2095	2258	2420	2577	2723	2873	2989	3096				
40	1461	1468	1479	1500	1548	1633	1770	1943	2139	2338	2547	2728	2910	3048	3174				
45	1353	1361	1369	1386	1424	1488	1606	1781	2005	2249	2500	2722	2942	3109	3249				
50	1209	1226	1246	1266	1295	1342	1437	1598	1837	2130	2422	2703	2973	3192	3380				
55	1090	1092	1095	1096	1124	1177	1263	1393	1613	1943	2310	2675	3029	3347	3615				
60	962	951	947	944	951	978	1031	1139	1342	1664	2131	2646	3191	3694	4131				
65	732	719	703	689	681	691	737	821	957	1237	1802	2577	3388	4232	5040				
70	408	400	386	355	333	332	346	378	455	631	935	1534	2392	3228	4036				
75	146	147	145	150	155	160	169	177	187	210	273	410	695	1196	1625				
80	32.4	38.6	43.7	49.1	55.1	61.3	67.9	75.4	83.8	94.3	109	130	161	205	308				
85	3.08	4.25	5.78	7.31	10.5	12.8	15.1	17.9	21.3	25.1	31.2	39.2	48.9	58.8	68.9				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

[illegible]

C (DEG) \ Y (DEG)		95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823
5	2966	2965	2952	2954	2950	2943	2942	2931	2933	2918	2899	2897	2882	2871	2856	2838	2824	2805	2795	
10	3081	3072	3055	3053	3052	3036	3033	3015	3011	2997	2971	2962	2946	2918	2901	2878	2853	2813	2787	
15	3173	3175	3155	3156	3157	3145	3127	3107	3102	3079	3050	3047	3005	2980	2964	2928	2885	2851	2796	
20	3259	3254	3242	3235	3241	3224	3210	3184	3175	3148	3131	3110	3080	3042	3028	3003	2947	2890	2811	
25	3360	3361	3335	3334	3332	3299	3283	3245	3233	3214	3192	3184	3142	3108	3084	3058	3014	2941	2857	
30	3506	3519	3488	3480	3465	3421	3370	3326	3308	3286	3279	3252	3226	3169	3145	3108	3066	2997	2894	
35	3693	3716	3695	3669	3645	3562	3493	3442	3414	3375	3352	3350	3304	3258	3214	3184	3128	3068	2942	
40	3949	3971	3949	3906	3826	3724	3680	3617	3567	3490	3443	3400	3371	3318	3284	3251	3199	3105	2986	
45	4165	4184	4163	4131	4059	3961	3914	3832	3752	3632	3537	3487	3444	3382	3363	3311	3258	3162	3039	
50	4178	4211	4207	4195	4165	4168	4146	4075	4006	3876	3771	3665	3585	3520	3483	3461	3361	3243	3071	
55	3822	3873	3903	3958	4036	4140	4223	4263	4260	4211	4113	4017	3890	3763	3702	3617	3485	3328	3121	
60	2747	2805	2897	3063	3300	3524	3777	4037	4247	4353	4420	4437	4338	4144	4015	3875	3654	3462	3191	
65	1197	1227	1274	1356	1519	1870	2322	2973	3504	4021	4448	4642	4720	4629	4392	4175	3893	3612	3251	
70	426	417	408	441	514	593	658	813	1446	2625	3489	4238	4523	4431	4217	3827	3433	3118	2814	
75	243	237	233	240	255	278	302	332	368	574	1296	2053	2423	2672	2412	2096	1795	1630	1574	
80	117	115	115	117	124	134	148	166	178	195	240	358	480	565	582	584	554	490	442	
85	32.5	32.8	33.0	34.0	35.9	39.0	43.6	47.7	54.4	60.2	68.1	78.1	89.4	87.8	80.4	71.2	65.6	62.1	64.8	
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	



[illegible]

Table--4

UNIT: cd

C (DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823	2823				
5	2627	2636	2637	2642	2651	2667	2669	2688	2702	2715	2731	2748	2763	2779	2795				
10	2437	2447	2460	2468	2478	2512	2522	2555	2583	2612	2644	2682	2719	2753	2787				
15	2238	2257	2279	2298	2319	2366	2396	2446	2486	2534	2587	2635	2697	2750	2796				
20	2007	2038	2071	2103	2144	2210	2264	2329	2392	2465	2542	2605	2678	2755	2817				
25	1801	1830	1869	1915	1963	2043	2117	2212	2302	2397	2495	2585	2679	2773	2857				
30	1559	1603	1656	1718	1787	1881	1965	2078	2188	2313	2454	2575	2692	2802	2894				
35	1326	1355	1401	1468	1556	1676	1788	1923	2069	2221	2389	2545	2696	2831	2942				
40	1168	1189	1220	1261	1323	1428	1576	1739	1912	2098	2284	2484	2677	2849	2986				
45	1033	1048	1076	1110	1153	1223	1322	1506	1711	1919	2152	2402	2651	2869	3039				
50	932	945	962	982	1015	1069	1124	1238	1458	1709	1991	2293	2587	2854	3071				
55	794	807	834	866	902	937	975	1035	1174	1444	1791	2132	2492	2842	3121				
60	649	679	694	713	746	778	817	874	943	1137	1503	1931	2367	2813	3191				
65	342	367	432	520	578	597	621	656	722	828	1149	1659	2202	2748	3251				
70	211	213	228	245	322	416	445	472	504	564	751	1226	1793	2326	2814				
75	117	121	126	133	144	186	251	268	284	319	376	625	951	1266	1574				
80	39.3	42.7	46.3	50.6	56.3	64.2	79.4	97.5	90.8	96.2	111	140	235	346	442				
85	3.38	4.75	6.56	8.54	12.0	14.5	17.1	19.8	22.1	25.3	30.3	37.2	45.0	54.5	64.8				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

[illegible]

[illegible]



[illegible]

Table--4

UNIT: cd

C (DEG) y (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900	2900				
5	2704	2714	2712	2721	2730	2741	2753	2769	2785	2798	2811	2831	2847	2868	2876				
10	2517	2529	2540	2551	2570	2597	2616	2644	2679	2705	2733	2778	2814	2850	2879				
15	2314	2337	2360	2381	2409	2453	2489	2539	2588	2635	2685	2736	2797	2857	2899				
20	2083	2113	2144	2184	2228	2300	2359	2427	2497	2573	2644	2717	2789	2870	2923				
25	1877	1912	1949	1996	2050	2127	2210	2312	2406	2505	2603	2705	2797	2893	2973				
30	1635	1685	1737	1802	1877	1968	2062	2174	2301	2431	2572	2700	2821	2934	3023				
35	1391	1427	1474	1551	1652	1774	1890	2031	2184	2342	2515	2681	2835	2973	3082				
40	1228	1254	1286	1335	1407	1527	1683	1851	2035	2230	2418	2628	2825	3006	3138				
45	1096	1114	1142	1176	1227	1305	1424	1624	1837	2055	2299	2561	2823	3039	3189				
50	983	1005	1024	1047	1086	1143	1210	1345	1587	1847	2141	2454	2770	3034	3249				
55	848	863	884	911	959	1008	1052	1122	1302	1588	1948	2312	2683	3040	3309				
60	692	726	742	768	805	834	869	945	1032	1276	1671	2129	2586	3039	3407				
65	359	396	474	568	624	647	675	714	782	925	1318	1878	2460	3029	3522				
70	220	226	242	266	363	455	486	514	554	627	886	1423	1996	2539	3016				
75	124	129	134	142	156	212	268	289	312	353	436	750	1108	1429	1743				
80	43.0	46.8	50.2	54.6	60.7	69.4	89.2	106	96.9	102	116	159	270	396	491				
85	3.64	5.10	7.02	9.34	13.2	16.0	18.7	21.8	24.6	28.4	33.4	40.2	47.7	58.9	68.9				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

[illegible]

[illegible]



[illegible]

Table--4																UNIT: cd			
C (DEG) y (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861	2861				
5	2669	2681	2675	2684	2691	2704	2714	2727	2742	2753	2766	2785	2801	2817	2828				
10	2483	2497	2501	2512	2523	2551	2568	2593	2624	2653	2676	2721	2759	2790	2817				
15	2285	2305	2324	2342	2362	2407	2440	2487	2528	2574	2621	2675	2737	2789	2827				
20	2059	2087	2113	2150	2187	2253	2310	2377	2438	2514	2580	2648	2722	2798	2849				
25	1855	1889	1918	1966	2011	2088	2166	2262	2350	2447	2534	2629	2719	2807	2885				
30	1625	1676	1719	1781	1845	1936	2024	2128	2243	2365	2493	2617	2734	2837	2921				
35	1373	1410	1455	1534	1630	1748	1856	1985	2132	2282	2444	2597	2743	2872	2968				
40	1210	1236	1263	1311	1381	1500	1658	1811	1983	2170	2347	2544	2735	2901	3021				
45	1078	1094	1117	1153	1198	1276	1390	1591	1791	1998	2225	2478	2726	2927	3072				
50	956	977	998	1022	1057	1112	1174	1302	1545	1789	2071	2374	2665	2921	3118				
55	829	842	860	885	922	969	1021	1083	1248	1532	1876	2226	2588	2927	3177				
60	678	713	723	743	777	808	832	898	990	1227	1600	2038	2480	2917	3280				
65	352	385	454	546	603	621	647	683	740	865	1243	1793	2356	2914	3400				
70	216	217	231	252	340	434	463	490	526	591	796	1339	1912	2452	2927				
75	119	122	126	133	145	193	250	273	294	331	383	660	1020	1341	1637				
80	39.0	42.5	45.4	49.3	54.6	62.4	79.3	95.4	86.6	91.8	104	131	230	344	445				
85	3.32	4.56	6.25	8.10	11.4	13.8	16.2	18.5	20.9	23.4	27.5	33.2	39.5	47.3	57.3				
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

<b>Table 6</b>		<b>Equipment List</b>			
Manufacturer	Description	Equipment ID	Model	Calibration Date	Calibration Due Date
EVERFINE	Full-field Speed Goniophotometer	SLCS-S-112	GO-R5000	2020/07/02	2021/07/01
EVERFINE	Digital Power Meter	SLCS-S-103	PF2010	2020/06/24	2021/06/23
EVERFINE	AC Testing Power Source	SLCS-S-115	DPS1060	2020/06/24	2021/06/23
EVERFINE	Total Spectral Radiant Flux Standard Lamp	SLCS-S-143	D908S	2020/07/02	2021/07/01
SENSING	2 Meter Integrating Sphere	SLCS-S-038	SPR-3000	2020/07/02	2021/07/01
YOKOGAWA	Digital Power Meter	SLCS-S-058	WT310	2020/06/24	2021/06/23
ALL POWER ELECTRONICS	AC Testing Power Source	SLCS-S-111	APW-105N	2020/06/24	2021/06/23
SENSING	Standard Lamp	SLCS-S-118	S11010017	2020/07/02	2021/07/01

**Appendix: Product Photos**

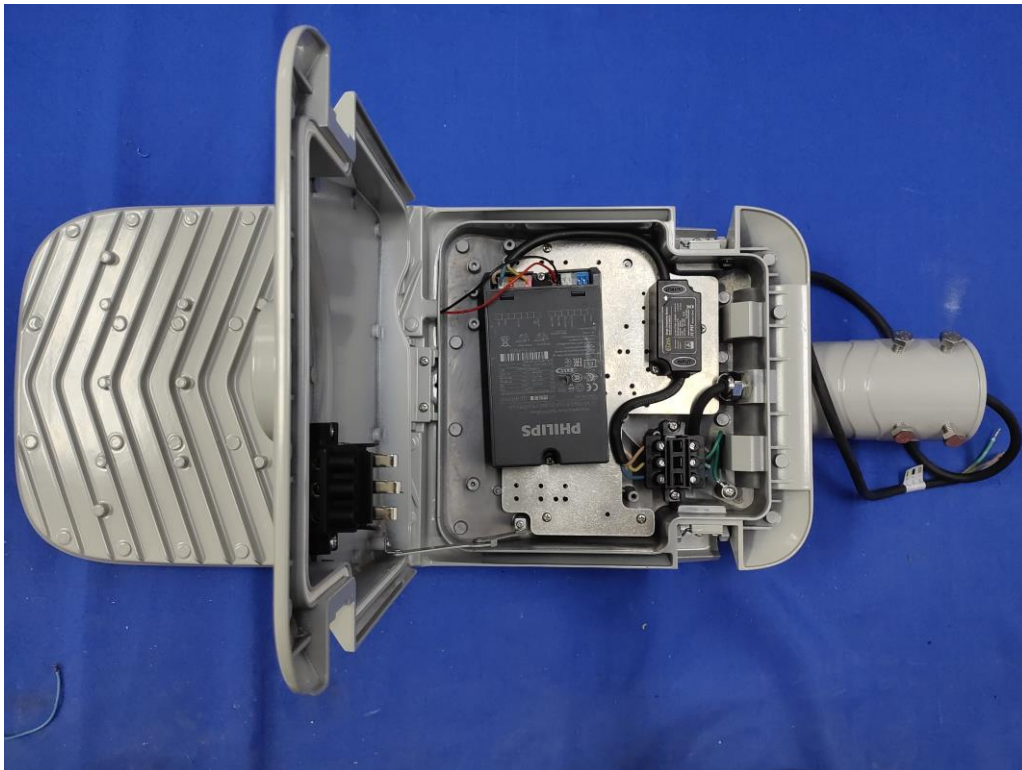


**Picture 1. Overall view of all models**

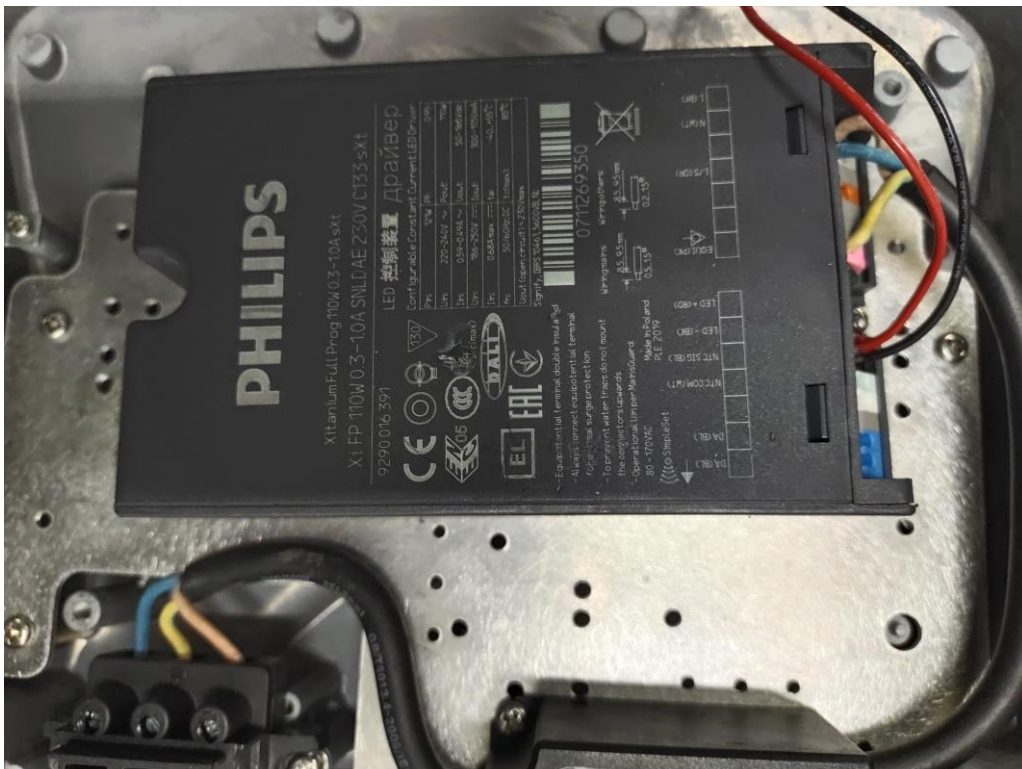


**Picture 2. Back view of all models**





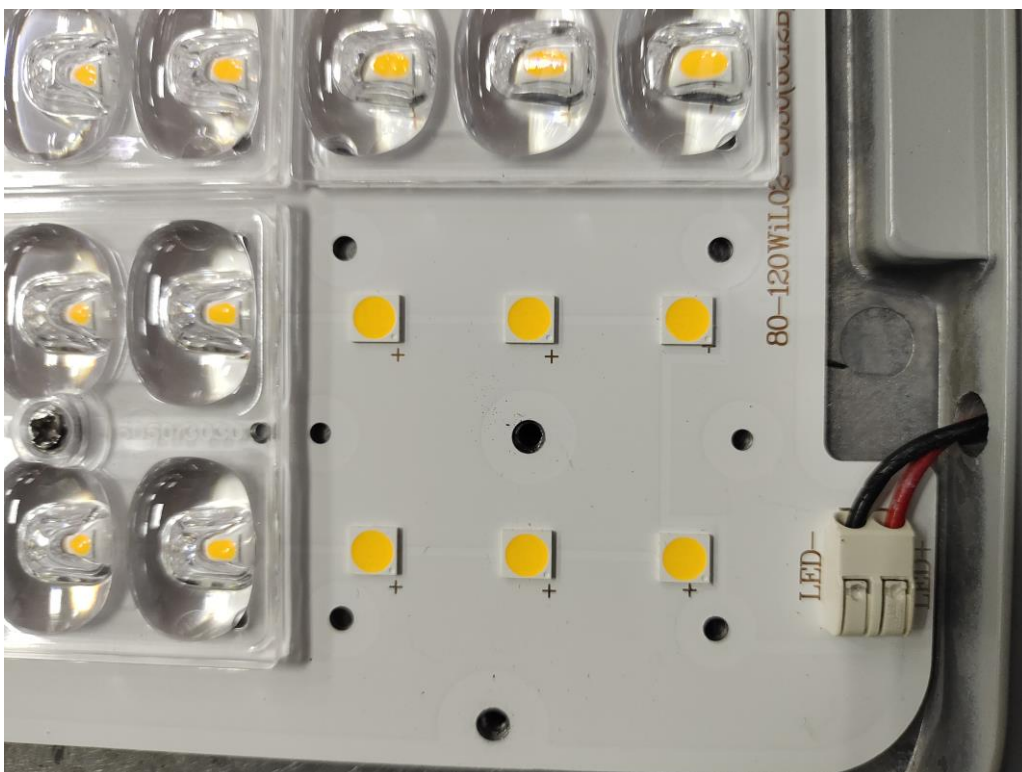
Picture 3. Internal view for all models



Picture 4. LED driver view for all models



Picture 5. Surge protective device view



Picture 6. LED chip view of LUXEON 5050





**Picture 7. LED chip view of LUXEON 3030 2D Line**

---End of Report---